SCIENCE AND INDUSTRY

Citrus Industry

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$2.00 Per Year Outside

PERRY MURRAY

Frostproof citrus grower and legislator, recently elected President of Florida Citrus Mutual

This Month

Vol. 33, No. 7 Bartow, Florida July, 1952

Citrus Insect Control For July, 1952

R. M. PRATT* AND W. L. THOMPSON
FLORIDA CITRUS EXPERIMENT STATION, LAKE ALFRED

Purple Scale activity is at a high level, and although there has not been a clearly defined peak of hatching in recent weeks, the average population has been increasing steadily, and 69 percent of the scales are in the first two stages.

Red Scale has been hatching rapidly during the past month and 76 percent of the scales are in the first two stages at the time this is written. The percentage of scales in the older stages will probably reach a level too high for efficient control early in August.

Black Scale, which is seldom an economic pest in Florida, has been on the increase, and now occurs in commercial numbers in a few groves. The peak of the hatch has just been passed, so where spraying is required it should be done as soon as possible. The scales are most readily found on the young wood and on the stems of the fruit.

Mealybugs are not as abundant as last year, but they are still on the increase and are causing damage in some groves. The emergence of whitefly adults is now at a peak, so most of these insects will be in a young stage in early July.

Purple Mites are still abundant but the average population is expected to decline during July. Rust Mites, on the other hand, are on the increase and they are likely to build up very rapidly on the fruit during July.

SPRAY PROGRAMS

The scale control program should now be well under way. There are usually some complications in the pest control program, especially where there is a limited amount of equipment for spraying a large acreage. One problem which arises each year is where a rust mite infestation develops about the time for the scalicide application. If a parathion-wettable sulfur combination is applied there is no problem. If an oil emulsion is to be used it is sometimes a question as to whether sulfur should be applied to control rust mites before the oil application. Oil sprays will kill the rust mites that are contacted but they have little or no residual effect. Unfortunately, only a low percentage of the fruit is completely covered with any spray, and it is usually the unexposed side of the fruit where most of the rust mites are found this time of the year. The unexposed side of the fruit is, of course, the most difficult to spray because it does not turn from the force of the spray and it is often protected by leaves. However, if there are not more than 5 to 10 percent of the fruit infested, then oil sprays should keep the infestation to a fairly low level for two to four weeks. If the infestation is above 10 percent it is well to apply sulfur for rust mite control and follow in two to three weeks with the oil spray. Where there is a medium to heavy rust mite infestation when the oil is applied a heavy reinfestation may be expected to develop from the mites and eggs that are not killed within a week or two after the oil spray.

Scale Control: In general, the heavily infested groves should be treated first. However, where oil was used in the post-bloom spray and is to be used again this summer, it should be applied as soon as possible and not later than the middle of the month. Two oil sprays affect the solids in the juice more than one spray and the longer the second application is delayed the lower the solids are likely to be when the fruit matures. Where practical, parathion should follow the post-bloom oil spray so that there will be a minimum effect on the solids. If parathion is to be used and the scale infestation is light, the application can be delayed until late summer. Where neither oil nor parathion was applied in the spring or post-bloom season, the grove should be sprayed as soon as convenient because of the rapid build up of scale in most groves. Any first application of the scalicide should be finished by the third week of July in order to get the spraying done while there is a fairly high percentage of young red scale stages present.

Black scale can be controlled with either oil or parathion. Where this is a problem the spraying should be done as soon as possible.

Whiteflies: Whiteflies are now in the young stages and are easily killed with either parathion or oil. Since the young larvae are on the most succulent foliage, a thorough coverage of the under surfaces of the leaves is necessary. A thorough cov-

(Continued on page 4)

*Written June 24, 1952. Reports of surveys by Harold Holtsberg, Cocoa; J. W. Davis, Tavares; K. G. Townsend, Tampa; J. B. Weeks, Avon Park; and T. B. Hallam, Lake Alfred.

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(Continued from page 3)

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Mealybugs: Mealybugs are now massed between the fruits hanging in clusters, on the stems of the fruit, and between leaves that are touching. For control parathion should be used at 1.5 to 1.6 pounds per 100 gallons. Thorough coverage is essential.

Purple Mites: Purple mites are still numerous in some groves. Where oil is used for scale control the purple mites are also controlled. A combination of 2 to 3 quarts of an oil emulsion plus 12 to 16 ounces of parathion can be used for purple mite and scale control. Three quarts of oil is more effective than 2 quarts, but until more information is available on the relation of the lower concentrations of oil to the solids in the juice, it is recommended that not more than 2 quarts of oil emulsion per 100 gallons be used after mid-July. The combination of oil and parathion has been giving very satisfactory scale control.

Rust Mites: Rust mites increase very rapidly this time of the year, so if any mites have been found in the grove, inspections should be made every week to 10 days. Even though the rainy season apparently has started, little control from natural agencies should be expected for four to six weeks. In no case should natural control he depended upon where it is desired to grow bright fruit. A thorough application of ¾ gallon of lime-sulfur plus 6 to 8 pounds of wettable sulfur per 100 gallons is more effective than either lime-sulfur or wettable sulfur alone. Do not apply sulfur for two weeks before or after an oil emulsion. If there is a slight burn from the oil a sulfur application of any kind is likely to cause a more severe burn where the application is made before the injury has healed.

Timely Suggestions: Where parathion is being used keep close check of your spray crews. Some crews are being very careless and sickness is bound to occur if the proper precautions are not taken. Where oil is being used as a scalicide on oranges try to finish spraying by mid-July, if possible, so that there will be the minimum effect of oil on the solids.

Consult the 1952 "Better Fruit Program" for detailed instructions on dilutions and spray combinations or the Citrus Experiment Stations at Lake Alfred or Fort Pierce.

New Size Method In Citrus Industry

A revolutionary new improved pack plan which completely revises Florida orange dimensions in Bruce boxes, is believed to be the "salvation" of all fresh fruit shippers and may become federal law next season.

Regrouping of the present nine orange sizes into five, is the proposal worked out by Harry G. Gumprecht, Jr., assistant general sales manager of the Florida Citrus Exchange. Extensive tests have proved it can be done with little effort, Gumprecht said, and the wide distribution from Seattle to Montreal and from Ishpeninf, Mich., to the deep South together with favorable reaction of the trade, heightens chances for its inauguration next year.

"The improved pack is more uniform than most of those in use today," commented Herbert Riley, head of the U. S. Citrus Inspection Service in Winter Haven. Riley, who stated he cannot commit the U. S. Department of Agriculture on the plan but favors it personally, has observed voluminous tests made in seven packing houses throughout Florida's citrus belt.

"It's a honey of a pack," he told a large group of sales managers recently. "The present pack is loose while the improved one is tight. It's smoother on top and the sizes can be set in half the time it takes to set the present sizes." Riley added that the new pack "will run between 95 and 100 pounds to the box."

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More About Citrus Nursery Stock Certification

JASPER N. JOINER
ASSISTANT EDITOR,
AGRI. EXTENSION SERVICE

Florida is the largest and most concentrated citrus-producing area in the world today. This is not a simple feat considering the poor, sandy soils prevalent in the major citrus areas of the state and has been accomplished only through the tireless efforts, close cooperation and undying faith of growers and researchers.

But in the 400-odd years of citrus production in Florida the propagation of this valuable commercial crop has been somewhat haphazard. Florida is the only major citrus-producing state in this country that does not now require certification of citrus nursery stock.

Citrus growers probably have a larger financial and time investment in a newly planted grove than growers of almost any other crop, yet they have lagged far behind producers of other crops in instigating a system of certified nursery stock.

Corn producers would not think of risking their investment by planting any thing but certified seed—and this is an annual crop. Every day citrus people risk their life savings on a long-time investment in citrus without considering the origin of their budwood and nursery stock.

The need for such a program has been forcibly pointed out to citrus growers by the results of such a lax system of propagation. Some groves in the state are 100 percent infected with psorosis, the most common of the bud-transmissible virus diseases. It is not uncommon to find groves 40 to 70 percent infected. Consider the tremendous loss to growers!

The tragic part of these insidious diseases is the time element involved before they show up to the untrained eye. Most of them do not make their appearance until the affected tree is 10 to 15 years old, when it should be nearing peak production. Instead, production declines. And remember, every tree that does not pay its way must have its expenses paid by a healthy tree.

Realizing the gravity of the situation and under the leadership of Fred P. Lawrence, Extension Citriculturist, interested growers attending the 1951 Citrus Institute at Camp McQuarrie, sponsored annually by the Florida Agricultural Extension Service, adopted a resolution to promulgate a budwood certification program. The resolutions committee appointed at Camp McQuarrie included A. H. Whitmore, secretary-manager of the Florida Citrus Production Credit Association, Orlando; Thomas Smart, citrus grower, Clermont; and Albert Morrell, grower from Orlando.

This resolution was then presented to the annual meeting of the State Horticultural Society held in West Palm Beach in the fall of 1951. The resolution was enthusiastically received by the members and a committee was appointed to draw up the regulations necessary to put a citrus certification program into operation. R. S. Edsall, president of the Florida Citrus Production Managers Association, was appointed chairman and Lacey W. Tate, Florida Citrus Production Credit Association, secretary of this committee.

Other member included W. F. Ward, Ward's Nursery, Avon Park; A. G. Scott, Glen St. Mary Nursery, Winter Haven; J. F. Alexander, Lake Garfield Nursery, Bartow; J. S. Kauffman, Grand Island Nursery, Eustis; A. C. Brown, State Plant Board Commissioner, Gainesville; A. H. Whitmore; W. W. Lawless, grower, Winter Haven; R. E. Norris, Lake County agent; Dr. A. F. Camp, vice-director and Dr. R. F. Suit, plant pathologist, USDA, Orlando; and Mr. Lawrence.

Here, briefly, is the statement of policy established by the committee to govern a citrus budwood certification program. This policy will be submitted to growers for their approval at the next Citrus Institute scheduled for Camp McQuarrie, August 18-22.

It should be noted first that the purpose of the regulation is to help

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Effect of Various Treatments Of Decay In Tangerines

(PART TWO)

J. H. WINSTON
SENIOR HORTICULTURIST
HOWARD HRUSCHKA
ASSISTANT PHYSIOLOGIST
RANDALL CUBBEDGE
SCIENTIFIC AID

Shipping Tests

Most of the shipping tests reported herein were made with wirebound crates during the season of 1950-51. A few earlier tests in which fiberboard cartons were compared with crates and crates with diphenyl-treated liners or blankets for decay control were compared with naked pack in crates are also included. The cartons as well as the crates were of 4-5 bushel capacity.

Ventilation in a Non-Fan Car

WFE 67837, a non-fan car, was loaded in Seminole County, December 20, 1950, with 861 wirebound crates of tangerines and shipped to New York where it was unloaded during the early morning hours of December 26. This car was billed to receive no ice, vents to be kept open to Potomac Yards, Virginia, and to be converted there to standard ventilation. A continuous record of the temperature within the crates of fruit was obtained from recording thermometers placed in crates in the top quarterlength, and bottom bunker positions in the forward end of the car.

The outside air temperature during the transit period was from 8 to 15 degrees F. below normal during the first two days, slightly above normal the third day, and followed by slightly subnormal temperatures.

The commodity temperature, averaged 62° F. when the car was loaded and the range at unloading was between 33° and 39°. The bottom of the load cooled at a uniform rate to about 35° by noon of the second day and by that time the temperature in the top of the load had been lowered to 52°. During the remainder of the transit period there was little change in temperature in the bottom load. The record of the top layer shows fairly fast cooling until about the third midnight after loading when the thermograph's clock failed. Three days later when the car was unloaded this thermograph registered 39°. The maximum spread in temperature between the top and bottom layers was about 17 degrees recorded at about noon of the second day after loading and was gradually reduced to 6 degrees at unloading.

There was no skin breakdown, and only 1.4 percent decay in the test packages on arrival. After one week at room temperatures, decay, almost all green mold, had increased to 10.0 percent but there was no increase in rind breakdown.

Ventilation Compared With Initial Icing Plus One Re-icing in Fan Cars

The two cars in this comparision, were loaded in Seminole County January 5, 1951, each with 880 wirebound crates of tangerines and with the fans sealed "On"!

One car, WFE 71218, with a few hundred pounds of old ice in the bunkers, was billed vents open to Potomac Yards, standard ventilation beyond, while the other, ART 27995, was initially iced with 10,000 pounds at Sanford 7:00 a. m. the morning after loading, re-iced with 4,000 pounds at Florence, S. C. 22 hours later, and converted to standard ventilation from Potomac Yards to destination. The bunkers were half full of ice when this car was unloaded 35 hours after re-icing.

During the transit period these cars were exposed to outside air temperatures that ranged from 10 to 14 degrees above normal during the first 2 days of the transit period and as much as 10 degrees below normal (i.e., below freezing), throughout the third day.

There was a considerate range in commodity temperature at time of loading; however, little change occurred before midnight when the cars started their northward movement. The commodity temperature in the test crates at the start ranged from 66° to 75° F. and averaged 70 degrees in the car under ventilation and the unloading temperature ranged from 50° to 54°. In the iced car, the fruit temperatures ranged from 71 degrees to 82 degrees with an average of 76° at midnight of the day of loading, and at unloading ranged from 42° to 44°. The second midnight after loading the temperature in the uniced car ranged from 65° to 69° with an average of 67 degrees and the temperature in the iced car ranged from 57 to 66 degrees with an average of 60°. Thereafter, the load in the iced car was about 10 degrees cooler than that in the non-iced one with a somewhat narrower range in the former.

Inasmuch as both cars were converted to standard ventilation about the third midnight after loading, it is interesting to note that the car without ice cooled at about the same rate as the iced car, thus indicating that the ice in the bunkers did not accelerate cooling after conversion to ventilation. In the uniced car the top layer was the warmest part of the load until the second midnight after which the middle layer was warmest. In the iced car the middle layer was the warmest throughout the trip.

Inspection at New York the fourth day after loading, showed that the test packages in the uniced car averaged 1.5 percent decay, while those in the iced car averaged 1 percent. A week later decay had increased to 11 percent and 5.2 percent respectively. Practically all of the decay was green mold. The greater amount of decay that developed in the lots from the car without ice probably was due to the higher temperatures in transit during the greater part of the transit period.

The Effect of Delay En Route on Temperature Reduction in Fan Cars

A pre-iced fan car WFE 73174, was loaded in Orange County with warm fruit on December 18, while a similarly iced fan car, WFE 72222, was loaded the next day with fruit from the same locality but not from the the same grove. The first car was precooled with Presco fans for seven and one-half hours after loading, while the latter was precooled six hours. Both cars with fans sealed in the "on" position were shipped under standard refrigeration, the former was diverted to Chicago, the latter went direct to New York, and

the two cars were unloaded seven and six days respectively after loading. The Chicago car was held at Albany, Georgia, for slightly over one day, while the New York car went through to destination on schedule.

No thermographs were placed in the bottom layer of either car. During loading, the fruit in the former car averaged 55.4° F. and the commodity temperature at both the top and middle of the load was 34° at unloading, while that in the latter car averaged 59.9° at loading and 34 to 37 degrees at unloading. By the first midnight, the fruit temperatures in the warmest part of the Chicago car was below 50° while the temperature in the New York car did not reach that level until the following evening.

By midnight of the day after loading, the temperatures in the top and middle of both cars were closely similar. The warmest part of the non-delayed car reached 50° by midnight of the second day after loading, while the temperature in the delayed car did not reach that level until nearly 24 hours later. The middle of the load was somewhat warmer than the top throughout the transit period in the New York car, and most of the time in the Chicago car. The effect of delay on temperature reduction, that resulted from the non-operation of the fans during the delay in transit, although not great, can be easily detected on the graph.

The temperature spread between the top and middle layers was narrower, mostly less than 5 degrees, in the Chicago car than in the New York car in which it was 2 degrees or 3 degrees greater.

The condition of the lading in both cars was satisfactory on arrival at their respective destinations. The test packages in the Chicago car had less than 1 percent decay and the New York car 1.4 percent when unloaded seven and six days, respectively, after loading. A week after unloading, decay in these crates had increased to an average of 4217 percent in the Chicago car, and 9.5 percent in the New York car. Practically all of the decay was of the green mold type. This great difference in commodity temperature during the transit period. It seems more likely that the difference was due to the innate keeping quality of fruit from the different groves.

Precooled Loads Compared With Non-Precooled Loads In Fan Cars

During January and February 1951, eight-paired carlots of tangerines in pre-iced fan cars were used in shipping tests to determine the effect of precooling. One car of each pair was precooled for six hours with the car fans while the companion car was not precooled. The fan levers of both the non-precooled and precooled cars were sealed in the "on" position by the shipper and the cars were billed standard refrigeration.

One car was diverted to Chicago while the other 7 cars went to New York. By the first midnight, soon after precooling, the top of the precooled loads averaged about 12 degrees cooler than the non-precooled load while the middle layers were only 6 degrees cooler. The bottom layers of the non-precooled cars were a few degrees cooler than those of the precooled group. By the second midnight the top of the load in the pre-cooled cars averaged only 7 degrees cooler than that in the non-precooled cars; the middle layer was only 3 degrees cooler; while the bottom positions were practically identical. By the third midnight the average temperatures were almost identical in the two groups of cars in each of the three locations and remained so to destination.

Thus there was a period of about 36 to 48 hours that the top and middle layers of the non-precooled cars were considerably warmer than in the pre-cooled cars. The middle layer was the warmest in both precooled and non-precooled cars except for the first 36 hours after loading when the top layer of non-precooled cars was highest in temperature.

At unloading, decay in the precooled test lots ranged from 0 percent to 1.4 percent, averaging slightly less than ½ of 1 percent. One week later the range in these test lots was 6.8 percent to 26.5 percent, with an average of 13.8 percent. In the non-precooled test lots decay at unloading ranged from 0 percent to 1.2 percent with an averaged 0.6 percent, while one week later decay ranged 3.4 percent to 17.8 percent with an average of 12.8 percent. Thus when fan cars are used precooling in such cars at shipping point appears to have had no economically significant effect on the amount of decay at unloading or a week later. Practically all of the decay observed in these lots, both on arrival and one week later, was green mold.

Shipping Tests to Pacific Coast

Four shipping tests with tangerines in wirebound crates under standard refrigeration were made in January and February, 1951, to the Pacific Coast.

The first transcontinental test shipment of tangerines was made in a pre-iced fan car, ART 28305, with 860 wirebound crates, loaded in Polk County, January 3, 1951. The shipment was precooled six hours with Preco fans after loading and received standard refrigeratoin en route. The fans were sealed in the "on" position by the shipper and the car was billed to Seattle for partial unloading at Spokane, diverted to Portland, and routed SAL, Md&S, CofGa., IC CMS P&P. The fruit had an average pulp temperature of 67.4 F. when loaded and when unloaded twelve days later the temperature ranged from 32° to 34°. During precooling, the commodity temperature was reduced in the top and bottom of the load more rapidly than in the middle. All parts of the load had cooled to 48 degrees or lower the day after loading, to 39° or below by noon of the third day, and to somewhat below 35° during the second half of the 12-day transit period. At no time in transit was there more than 7- or 8-degree spread in temperature between different parts of the load; usually it was less than 5 degrees. This car was serviced with 27,500 pounds of ice of which 5,620 pounds was supplied beyond Birmingham, Alabama, or after the second day enroute. The general condition of the fruit was very good on arrival at Portland two weeks after loading. In the test packages, decay averaged approximately 2 percent, mostly green mold.

The second transcontinental test was loaded in Orange County, January 31, 1951, and shipped to Los Angeles via SAL, L&N, SP. This non-fan car, FGE 10931, was loaded with 855 wirebound crates of tangerines with a pulp temperature of 72.9° F. At time of unloading, twelve days later, the temperature range in the load was 35° to 43°. After loading, the car was precooled six hours with a mechanical refrigerated precooling unit placed in the doorway, and the car was initially iced after precooling, and shipped under standard refrigeration.

Excellent cooling was obtained with the mechanically refrigerated unit for the commodity temperatures in the top of the load were reduced about 30 degrees, the middle quarter-length position 25 degrees, and the bottom layer about 15 degrees.

By noon of the day after loading the warmest part of the load was below 50° F. The temperature in the top of the load remained fairly constant between 40 and 45 degrees during the transit period whereas

(Continued on page 13)

Annual Citrus Growers Institute

Official Program 19th Annual Institute At Camp McQuarrie, Lake County, Florida --- Monday Thru Friday, Aug. 18-22

Monday, August 18

R. E. Norris, in Charge

2:00-6:00 p.m.—Camp Registration

6:15 p.m.—Supper—Mess Hall

8:00 p.m.—Assembly—Auditorium

(Featuring Roy Young)

Tuesday, August 19

K. S. McMullen, in Charge

7:45 a.m.—Breakfast—Mess Hall

8:30 a.m.—Auditorium — Announcements and songs

M. O. Watkins, Presiding

8:45 a.m.—Today's EYE OPENER —Karl Lehman, Secretary Lake County Chamber of Commerce

Opening Remarks—H. G. Clayton, Director, Florida Agricultural Extension Service

"Factors Influencing Quality Fruit Production" — Dr. Walter Reuther, Principal Horticulturist, USDA, Orlando

Intermission

"A progress Report on Concentrate Sprays" — C. R. Stearns, Jr., Assoc. Chemist Citrus Experiment Station

"Biological Control of Citrus Insect Pests" — Dr. M. H. Muma, Associate Entomologist, Citrus Experiment Station, Lake Alfred

12:15 p.m.—Dinner—Mess Hall

Prof. L. W. Ziegler, Presiding

"Does Grove Irrigation Pay? Yes or No" — Zach Savage, Associate Economist, Agricultural Experiment Station, Gainesville

"A Mechanical Method for Measuring Soil Moisture" — Dr. Luther C. Hammond, Associate Professor of Soils, Florida College of Agriculture

Intermission

"Yellow Spot of Citrus and its Control" — Dr. Chester B. Leonard, Associate Horticulturist, Citrus Experiment Station, Lake Alfred

"A Preliminary Report on the Use of Iron Chelates for Correcting Iron Deficiency" — Dr. Ivan Stewart, Assistant Biochemist, Citrus Experiment Station

"Possibilities of Marketing Citrus Thru Dispensers"—R. M. Townsend, Florida Citrus Mutual, Lakeland

4:00 p.m.—Adjourn — Swimming, Boating, Fishing, etc.

6:15 p.m.—Supper—Mess Hall

8:00 p.m.—Auditorium—Roy Young

Wednesday, August 20

K. S. McMullen, in Charge

7:45 a.m.—Breakfast

8:30 a.m.—Auditorium — Announcements and Program

Fred P. Lawrence, Presiding

8:45 a.m.—Today's EYE OPENER—John Ford, Executive Vice-President, Florida Farm Bureau Federation

"Calcium and Iron in Citrus Nutrition"—Dr. Ralph Miller, Director of Research, Plymouth Citrus Products Cooperative

Intermission

Citrus Budwood Certification

W. L. Tait, Chairman

"Citrus Diseases That Might Be Controlled thru Budwood Certification"—Dr. J. F. L. Childs, Plant Pathologist, USDA, Orlando

"Report on Action Taken on the Resolution on Budwood Certification at the 1951 Citrus Institute—W. L. Tait, Chairman Bud Certification Committee

12:15—Dinner—Mess Hall

Fred P. Lawrence, Presiding

1:30 p.m.—"Address" — Willard M. Fifield, Director Florida Agricultural Experiment Station

Bud Certification Program Continued—W. L. Tait, Presiding

"State Plant Board Regulations and Procedures for Handling the Budwood Certification Program" — A. C. Brown, Commissioner, State Plant Board of Florida

"The Role of Citrus Nurseymen in a Budwood Program"—Dr. H. Harold Hume, Dean Emeritus, Florida College of Agriculture

"4-H Club Boys 'Learn by Doing' Carrying Out a Budwood Certification Program"—Jack T. McCown, Assistant Lake County Agent

4:00 p.m.—Adjourn — Swimming, Boating, Fishing, etc.

6:15 p.m.—Supper—Mess Hall

8:00 p.m.—Auditorium—Roy Young

Thursday, August 21

K. S. McMullen, in Charge

7:45 a.m.—Breakfast—Mess Hall

8:30 a.m.—Auditorium — Announcements

Dr. E. W. Cake, Presiding

8:45 a.m.—Today's EYE OPENER —Colin D. Gunn, State Conservationist, U. S. Soil Conservation Service, Gainesville

Marketing

"The Citrus Industry's Place in the Nation's Business & Economic Outlook" — Dean Walter J. Matherly, College of Business Administration, University of Florida

"Selling Florida Citrus" — John T. Lesley, General Manager, Florida Citrus Exchange

Intermission

"Scale and Mite Control"—W. L. Thompson, Entomologist, Citrus Experiment Station

"Problems in Developing a Balanced Supply Program for Florida Citrus"—Dr. J. Wayne Reitz, Provost for Agriculture, University of Florida

12:15 p.m.—Dinner—Mess Hall

F. S. Perry, Presiding

"The Program of the Florida Citrus Commission"—L. F. Roper, Winter Garden, Chairman

"Growers' Loss in Fresh Fruit Transportation"—W. S. Jensen, Railroad Perishable Agency

Intermission

"Effect of Packing House Treatments, Temperatures in Transit and Containers on Decay in Zipper Skin Oranges"—J. R. Winston, Senior Horticulturist, USDA, Orlando

"Some Results with Hedging Citrus Trees"—Morty Howell, Production Manager, Waverly Growers Cooperative

"Citrus Root Distribution on Sandy Soils"—Dr. Harry W. Ford, Assistant Horticulturist, Citrus Experiment Station, Lake Alfred

4:00 p.m.—Adjourn — Swimming, boating, fishing, etc.

6:15 p.m.—Supper—Mess Hall

8:00 p.m.—Auditorium—Roy Young

Friday, August 22

7:45 a.m.—Breakfast — Camp Adjourn

The Citrus Growers' Institute at Camp McQuarrie is directed by the Florida Agricultural Extension Service. Facilities are available for citrus growers and their families, consisting of cottages which are divided so that men and boys room together and the women and girls together. Guests must provide their own sheets, pillows, towels and other personal articles. Meals are served in the mess hall at the Camp.

Camp McQuarrie is located in the Ocala National Forest. Recreational

(Continued on page 10)

The Story of The Florida Citrus Commission

RICHARD W. MULVILLE
TRADE RELATIONS MANAGER

Part III --- 1946-1952

The ending of World War II marked the beginning of a new era of intensive advertising and promotional activity on the part of the Florida Citrus Commission. During the war years, the demand for Florida's canned citrus juices, to supplement the armed services food needs, had accelerated the growth of this part of the industry. Here is a look at total canned citrus production records for the last war season, along with government purchases:

(Basis 24 1944-45 No. 2's per case)	Total U. S. Peak	Govm't Purchase
Grapefruit Juice	22,435,000	9,482,000
Orange Juice	16,777,000	4,591,000
Blended Juice	8,075,000	3,378,000

Of the total pack figures, the Florida citrus industry alone accounted for 54% of the national pack of grapefruit juice, 81% of the orange juice, and 95% of the blended juice. With the ending of hostilities and the almost immediate cancellation of all government requirements, a large surplus of all single-strength juices remained.

Throughout the war, the Commission had confined its advertising activities to an institutional type approach. That is to say, the Commission through its advertising in this period stressed more the role the citrus industry was playing in keeping the nation's health and that of its armed forces at a high level. In this manner, the Commission's advertising of that time served the industry in two important ways: (1) it performed a public relations job in the sense that the American public was informed of the important part the Florida citrus industry had in the nation's war effort, and (2) the advertising kept Florida citrus in the minds of the people, an investment against the day when the industry would have to do a more intensive selling job.

In carrying out the institutional program outlined above, a limited expenditure of advertising funds was needed. During the war years a reserve of advertising funds had been wisely accumulated for the post-war period.

The time had come therefore, in 1945-46, for a big scale advertising and promotional push in behalf of canned juices. There was an all important transition from "order-taking" or allocation of supplies to a program of "selling."

During the succeeding months, Florida citrus advertising appeared in national magazines, in Sunday newspaper supplements, in farm magazines and in daily newspapers.

Radio announcements were made over radio stations in large cities. Finally, for twelve weeks, at the height of the intensive advertising and merchandising activity, Fred Waring and his famous orchestra was sponsored by the Commission over a nation-wide network, in an effort to move a huge backlog of supplies created by the discontinuation of government purchases and increased production of canned juices. Here again, the special advertising of the Commission to stimulate sale of surplus stocks was a concrete example of how the Florida Citrus Commission is constantly working for the benefit and welfare of the industry.

One of the major developments in the long history of the Florida Citrus industry occurred in this past-war period. Through the efforts of workers of the Florida Citrus Commission's research department, headed by Dr. L. G. MacDowell, in cooperation with the U. S. Citrus Products Station at Winter Haven, a process for producing a wholly acceptable frozen orange concentrate product, from the standpoint of flavor, quality and appearance, was perfected. The process patent was subsequently assigned to the Secretary of Agriculture and is the basis for processes used within the industry today.

In closing this series of articles, a quick review of the Commission's present day activities, aims and purpose may be worth while.

In the present highly competitive era, of course the first objective of the Commission is, through a sound advertising and merchandising campaign, to enable the industry to move the ever-increasing crops into distributor channels at a reasonable profit to grower, packer, processor, distributor and retailer. To this end the Commission now expends approximately $2,300,000 yearly in behalf of its consumer advertising program. Television programs in eleven cities, radio shows in 27 cities, are used to bring the word about Florida citrus into the home. Newspaper ads appeared this past season in some 209 newspapers in 138 cities. Each of those papers carried, on the average, five large size ads spaced to provide merchandising for retailers at seasonal peaks. The broad mass of of the nation's consumers received the Florida citrus message in national magazine ads, one each week throughout the season in either Life or Saturday Evening Post, and one each month in Ladies' Home Journal during the January-June period.

At the retail level, the Commission's 40 man field force works constantly 52 weeks out of a year to impress upon the retail trade in important Florida citrus markets, how necessary and worth while it is to

Commodity	(Season (000 Boxes) 1949-50	1950-51	1951-52
Oranges	58,500	67,300	78,500
Grapefruit	24,200	33,200	36,000

And also, the figures on processed production:

Commodity	Season 1949-50	1950-51	1951-52
Full Strength Orange Juice *	17,419	20,031	19,500/1
Full Strength Grapefruit Juice *	7,894	12,742	8,500/1
Frozen Orange Concentrate **	21,647	30,758	44,000/1

(* in terms of thousands of cases, packed 24/2's)
(** in terms of thousands of gallons)
(/1 Estimates)

stress Florida citrus in their everyday selling programs.

To realize the size and scope of the merchandising and advertising task which had to be accomplished by the Commission in the post-war era, one need only look at the Florida crop production figures for the past few years:

At the Lakeland office, other activities are engaged in by the Commission's staff, for the benefit of the industry. Among these are research activities, in cooperation with the Lake Alfred Experiment Station, handling of regulatory matters pertaining to the packaging, grading and maturity standards for the citrus industry and also engaging in matters pertaining to licensing of shippers and canners of citrus. A statisical department also keeps tab on the various records on production, shipments, crop estimates, and other matters of interest to the industry.

In the seventeen years since its inception, the Florida Citrus Commission has assumed the leadership for the industry in merchandising and selling the increasingly larger crops and is nationally recognized as an outstanding example of what growers can do for themselves by banding together for their mutual benefit. In the years to come, the continuation of the Commission's activities and leadership should be of more value and aid to the industry.

MORE ABOUT CITRUS NURSERY STOCK CERTIFICATION . . .

(Continued from page 5)

growers and nurseymen produce citrus nursery trees free from virus and other recognizable, bud-transmissible diseases. Participation in the program will be voluntary.

The inspection required by the plan will be performed by employees, technical advisers or agents of the State Plant Board. Applications for registration will be acted upon in the order in which they are received.

Growers and nurserymen who want to participate in the registration program will make application, on standard forms to be provided by the State Plant Board, for the examination of not more than forty trees of all varieties. When application is made, participants must agree to comply with all conditions of the registration program.

To be qualified for the program trees must be at least 10 years old or older from date of planting on the property, vigorous, productive, and apparently true to variety type.

After application the inspector will examine trees selected by growers or nurserymen at a time when flushes of growth, preferably spring flushes, are present on the trees. He will also examine all other trees within a radius of 35 feet (trunk to trunk measurement) from the parent tree.

The prospective parent tree must be apparently free from psorosis, Florida gumosis, exocortis, blight, spreading decline, leprosis and evidence of bud mutation. The trees within a 35 foot radius must be free from these or any other recognizable bud-transmissible diseases.

If they pass the initial test, trees will then be reinspected during flushes of growth over a period lasting through two subsequent spring seasons. This probationary inspection period may be extended at the discretion of the Plant Board commissioner. If trees involved pass all three inspections, the parent tree will then be registered and certificates and a registry number will be issued to the grower or nurseryman. The certificate of registration will be valid for a period of five years unless revoked.

Certification can be revoked at any time that repeated inspections show symptoms of bud-transmissible diseases appearing in the parent or surrounding trees.

At the end of each five-year period, parent trees may be registered subject to continued eligibility. Failure to reregister qualified trees at the end of a five-year period will automatically cancel the registration certificate.

As a further check on certified trees, the State Plant Board will remove buds from trees undergoing registration qualification and propagate them in test plots maintained by the board. Complete records will be kept so that at any time a bud-transmissible disease symptom appears the tree from which the bud was taken can and will be condemned.

Growers and nurserymen will be required to keep complete records on registered tree as well as trees progagated from registered trees. Blocks of trees, not exceeding 350 of any one variety which have been progagated from certified parents, can be registered provided they have been budded on rootstocks not previously budded. The nursery inspector has been provided with a chart of such planting and a record of the parent tree, the trees are at least four years old from date of planting, and no symptoms of virus or other bud-transmissible diseases are present.

Until an adequate source of certified budwood is available nurserymen may, at their own risk, progagate prospective scion grove trees at any time after the registered parent tree has passed the preliminary inspection. Complete certification will not be given, however, until the parent tree has been regularly certified according to the program outlined above.

In addition to providing trees free from bud-transmissible diseases, the proposed citrus budwood certification program will have other secondary, beneficial effects on the industry. Under such a concentrated certification program only trees of good vigor producing high yields of good quality fruit will be chosen. This will eliminate slow-growing, low producers from being propagated.

Under the past haphazard method of bud-wood selection many strains of varieties and, indeed many varieties have been propagated that are undesirable. For instance growers have planted trees believed to be Valencias only to discover later that they have fruit ripening from February until June. Naturally these are not all true Valencias. In the certification program only those trees will be selected that have the best qualities of each true variety.

Thus the proposed program will assure growers of getting disease-free stock and stock that will produce high yields of quality fruit true to the best varietal characteristics.

ANNUAL CITRUS GROWERS INSTITUTE . . .

(Continued from page 8)

facilities include fishing, swimming, boating and group singing.

For further information and reservations write Mr. R. E. Norris, County Agent, Tavares, Florida, who is the Citrus Institute Manager.

There is an official folder describing Florida's State Parks and Historic Memorials, and telling how to get to them and what facilities they contain for overnight stops, bathing, boating, fishing. It may be obtained free by writing to the Florida Board of Parks and Historic Memorials, Tallahassee, Florida.

College gal, making conversation on her first date: "So your name is Tom. I know George means 'lover of horses,' and Philip means 'beloved'—but tell me, what does Tom mean?"

"Business, Baby, business!"

Florida Citrus Mutual

N. F. LAVIGNE
PRESS RELATIONS

Florida Citrus Mutual's new program of positive action, adopted by its Board of Directors on May 21, has two main points:

Exerting every effort to increase demand.

Some type of program to siphon off whatever volume of fruit is necessary so what is left will bring a reasonable price.

This second point is based on the theory that it's better to get something for most of a crop than nothing for all of it.

There are several things which Mutual will do in the effort to increase demand. One of them is to develop a dispenser program for both fresh and processed juices just as rapidly as possible.

Considerable headway already has been made, with a special division established in the Mutual organization for this purpose. It is headed by R. M. Townsend, who made a progress report at all seven district elections held recently. He was quite optimistic and pointed out that one large concentrate company already had 16,000 dispensers in operation and had ordered 4,000 more.

Whether Mutual ever will use floor prices again is problematical. There can be no doubt that floor prices were used effectively in the past, and resulted in many millions of extra dollars for growers, but no group of farmers ever has been able to make such prices stick unless they were backed by government money, or some central agency had complete control of the commodity and could dole it out to the market in the exact volume necessary to maintain a price.

The Florida citrus industry is not set up to do this as yet. It may be some day when growers are willing to surrender their right to sell when and where they please, in order to keep from going bankrupt.

On this subject, Mutual's new program has this to say:

"Instead of going on the principle that growers can make the users of their product pay a price simply by asking for it any trying to use such a price as a control factor, growers can exercise their power through organization to far better advantage by creating conditions that result in the price to which they are rightfully entitled in the market place."

A. V. Saurman, Mutual's general manager, has expressed the same thought in even fewer words with the statement that "Price is a result and not a cause."

This is the third and final chapter in a series of articles on the organization, work and plans of Florida's great super-cooperative organization.—Editor.

In other words, supply and demand determine price. Price does not determine the factors which create it. Florida citrus growers do have the power to control supply, of course, by means of a program which would enable the volume available for commercial channels to be limited. There is far from any unanimity of opinion, however, on how such a program should operate and a campaign of education still must be conducted to let growers know the different ways supply can be controlled and let them decide which one they prefer.

When Mutual's Board of Directors adopted the action program it had developed, a profound preamble was written into it. Because this program may become the most important thing ever to happen to the Florida citrus industry, it is being given in full here. Parts of it have been used in the newspapers and the entire program has been furnished all Mutual members. It follows:

"Mutual's membership includes every kind of grower, from the smallest to the largest, the independent who sells his crop for cash, the cooperative grower and the grower-handler who own their own packing or processing plants, the investment grower, both resident and non-resident, the grower who does his own work and the grower who hires it done. These growers represent nearly every conceivable shade of opinion about all phases of the growing and marketing of citrus.

"Mutual's contract handlers also include almost every kind of operator, from the largest concentrator to the smallest canner, from the big fresh fruit packer to the one-car packer, independents, cooperatives and grower handlers, as well as intermediate handlers (Bird-Dogs) with one truck to those who perform the harvesting services involving millions of boxes annually.

"Mutual must and does recognize all these variations in interest, size and ways of doing business. It fully understands that the structure of the industry as it exists today must be taken into account in the development and operation of any plan designed to help its members. There are certain things which growers and handlers want which, if they really want them and believe they are the answers to the problems, will require changes in their manner of doing business. Mutual must, in full recognition of this situation, continue to point out some of the things the industry must consider if it wants to proceed along certain lines. For example, it seems apparent that many of the suggested marketing control programs can only operate equitably and practically if the growers' fruit is under preseason control. In other words, every grower should have a "home," with whatever type of handler he prefers, so that in plans that regulate and limit supplies he will be in a position to get his fair share of the market. It is Mutual's belief, however, that such changes as may be desirable in the structure of the industry should come about by evolution as the need for them becomes apparent.

"An industry that understands its problems and collectively does something about them will benefit each part of the industry in direct proportion to each one's interest. The effort to market our production to best advantage can be accomplsihed through such collective planning and action. Only through an organization like Mutual can this be done.

"Instead of going on the principle that growers can make the users of their product pay a price simply by asking for it and trying to use such a price as a control factor, growers can exercise their power through organization to far better advantage by creating conditions that result in the price to which they are rightfully entitled in the market place. Knowledge of market conditions, of the size of the crop (supply), buying power (demand), use of orderly marketing programs, better quality products—all can help get better prices and be of definite value to the grower. Carefully planned advertising, vigorous promotion and good salesmanship increase demand and values, both immediate and long range. However,

NP; and shipped under standard refrigeration with fan levers sealed in the "on" position. Part of the load consisted of 210 lightly precooled crates, with an average temperature of 70.7°F, when loaded. The rest of the load consisted of 646 crates that there are no magic formulas in marketing controls that will in themselves solve the price problems of every grower. There are certain programs and actions that can help but the real price determining factors are, and always will be, supply as related to demand. When supply increases faster than the ability to expand demand, there is trouble. The industry's greatest problems are in this field.

"The Mutual Board of Directors acknowledges with gratitude the splendid report made to them by the Industry Planning Committee, and it is deeply appreciative of the suggestions made by our Advisory Committee. The broad overall action program recommended in the Industry Planning Committee Report and the suggestions of the Advisory Committee have been carefully and thoroughly considered in the development of the program which is presented to Mutual members for their consideration.

"As pointed out by the Industry Planning Committee, Mutual was thought to be the organization best suited for the task, and the Board of Directors feels that Mutual can be the means of working out these plans which are so important to the future of the industry. To have a clear understanding of the program necessary to do the job requires a somewhat detailed outline of the policies and activities that should be followed by Mutual so the industry can know what to expect and how it will benefit from the use of this program.

"This program is a positive approach to meeting some of the pressing problems now facing the industry. It is designed to assure maximum effectiveness in Mutual's day to day operation and to provide a means for industry planning and development that is needed as the industry grows and expands:

"A. What Mutual Will Do Unless Otherwise Directed by Its Members:

1. Develop the dispenser program for both fresh and processed juices as quickly as possible.
2. Expand the use of Mutual's dioramas and exhibits at expositions, fairs and conventions, to the maximum extent available funds will permit, and to fully cooperate with the Commission and other agencies in the promotion of Florida citrus.
3. Establish an Export Department in Mutual to seek and promote foreign outlets for Florida citrus.
4. Lend its assistance and cooperate with all agencies working in the field of research in handling, merchandising, marketing, development of new uses and utilization. It will serve as an agency to keep the industry advised of research progress in these fields.
5. Assist in developing improved grade standards and handling practices, both fresh and processed, and seek better maturity standards and methods of enforcement. Make a special effort to see that action is taken to preserve the quality and reputation of frozen concentrated citrus juices.
6. Vigorously work for obtaining better market facilities in the northern terminals.
7. Use a voluntary allotment program, as needed, to assist in orderly movement to the fresh fruit markets.
8. Maintain representatives in the terminal markets to keep the northern trade and Florida shippers fully informed.
9. Make economic studies on price and release information to the industry of the justifiable minimums for raw fruit for processing and FOB packed fresh fruit as indicated by such studies.
10. Use every means possible to develop accurate market information and promptly and currently disseminate such information to growers, handlers and the trade.
11. Keep the industry informed on changes, trends and developments and strive for better understanding by growers, packers and processors of the many factors involved in the marketing of the citrus crop.
12. In considering any new major developments, such as a surplus control program and the other projects suggested below, Mutual will arrange for a panel of industry leaders to appear at meetings in every district so as to afford full discussion and understanding of the problems involved, and to determine whether the project is feasible and the best course of action to be followed.

"B. What Mutual Will Do If Its Membership Wants It To:

1. Levy an assessment sufficient to develop a merchandising and sales promotion staff to complement the advertising program of the Commission or use the influence of Mutual in seeking legislation to provide additionl funds for the Commission to expand its merchandising work.
2. Seek to work out better coordination of the programs of advertising and sales promotion of the various industry agencies and organizations and to develop a more uniform method, such as a Mutual seal of approval, for identifying top quality fresh and processed citrus.
3. Seek appropriate state legislation to enable the industry to adopt, by vote of the growers and handlers, a Marketing Agreement to provide the machinery to balance supply with demnad by diversion of surpluses from normal marketing channels when supplies are temporarily in excess of demand and to obtain a more orderly movement of the crop. Such enabling legislation should make possible the right to levy assessments for a stabilization fund and should provide for the establishment of pools for export and for new uses such as in the beverage field. Mutual will continue its efforts to have the Federal Marketing Agreement Act amended to include fruit for processing so that this Act will also be available for use if needed.
4. Conduct a study to determine whether legislative or other action is feasible which would deter plantings of new groves as a result of artificial conditions, and, at the same time, keep plantings in line with future demand. In this connection to determine the magnitude of our potential production, Mutual will request that a survey of present plantings, including acreage, varieties and age of trees be made by an appropriate governmental agency.
5. Consideration of Fair Trade Agreements (sometimes referred to as a Code of Ethics) for the handlers, either processors or fresh fruit shippers, or both.
6. Undertake a survey to determine the need for additional storage facilities for processed products.
7. Work on other problems its membership wants it to.

This program represents the think-

ing of the best available brains. It was worked out after an Industry Planning Committee, headed by Dr. J. Wayne Reitz, provost for agriculture of the University of Florida, had made a comprehensive study of industry problems and released its findings.

Whether all or any part of the program will be developed depends on Mutual's membership. No program of any kind can be effective without the support of the 7,000 growers who are Mutual. It is a good program, however, which holds the promise of making citrus growing in Florida a reasonably profitable business.

It is not intended to perform miracles.

It is intended to put the citrus industry on a big business basis, where growers can get a moderate profit in line with their investment.

With crops now hitting the 120,000,000-box mark, an increasing by chunks of several million boxes each season, some such program must be worked out or the citrus grower faces a gloomy future.

Mutual's every effort from now on will be aimed at getting the new action program in operation — assuming, of course, that this is what its members want it to do.

EFFECT OF VARIOUS TREATMENTS OF DECAY IN TANGERINES

(Continued from page 7)

the bottom layer at the bunker which soon became the coldest part of the load reached 35 degrees within two or three-days, and remained at or near that during the remainder of the trip. During transit the temperature in the middle position fell slowly and leveled off somewhat below 40 degrees five days after loading, and maintained a range between 35 and 40 degrees. Thus during the greater part of the transit period, the top of the load was only 6 or 7 degrees warmer than the coldest location. This car was supplied with only 19,600 pounds of ice during the transit period, 13,300 pounds of it east of the Mississippi River.

The condition of the general load at Los Angeles fourteen days after loading was very good with an average of less than ½ of 1 percent decay in the main load and ½ of 1 percent in the three test packages.

The third transcontinental shipping test, a fan car, FGE 38513, was loaded in Volusia County, January 31, and shipped to Seattle via ACL, Frisco, UP, with a partial unload at Portland. This car was pre-iced, loaded five layers high throughout with 1,010 wirebound crates of tangerines, precooled for six hours with motor-driven Preco car fans and shipped standard refrigeration. After precooling, the fans were sealed in the "on" position.

During loading the tangerines had 70° F. and at the end of the precooling period the top of the load had cooled to 60°, middle to about 64°, and the bottom to 53 degrees. When unloaded, fourteen days later, the fruit temperatures ranged from 33 to 36 degrees.

Throughout the transit period, the middle layer was the warmest part of the load, but the top of the load was only slightly cooler than the middle layer. The maximum spread in temperature during the transit period, about 70° F., occurred at about midnight the day after loading before the car had been moving long enough for the fans to have much effect. Then the warmest part of the load was 60 degrees. The following midnight the warmest part of the load was about 60°. The following midnight the warmest part of the load was about 50° and there was less than 10 degrees spread in temperature between the warmest and coldest locations. By the seventh day after loading the maximum temperature was below 40 degrees while the minimum hovered around 34° and during the remainder of the trip the maximum temperature was about 36°, with a temperature spread of 4 degrees or less. This car was serviced with slightly more than 32,000 pounds of ice of which 7,200 pounds were supplied beyond Birmingham after the second day en route.

On arrival at Seattle fourteen days after loading, the consignment was in very good condition and was accepted without exceptions. In the test packages decay, green mold, ranged from 0 to 2 percent and averaged less than 1 percent.

The fourth test shipment to the Pacific Coast originated in Polk County, on February 20, 1951. A fan car, SFRD 4328, was loaded with 856 wirebound crates of tangerines and shipped to Tacoma, Washington, to be partially unloaded at Seattle. This car was pre-iced, loaded with partially precooled fruit, routed SAL, MD&S, CofGa., Frisco, CB&Q,, and

(Continued on page 18)

The LYONIZER

Department

COMPILED BY THE LYONS FERTILIZER COMPANY

Reports Of Our Field Men . . .

SOUTHWEST FLORIDA
Eaves Allison

While the rainy season has not really started yet—June 15—we have had a couple of good rains in this area which have laid the dust. In some groves this has amounted to enough to shut off the irrigation plants.

Fruit is sizing up well but the trees in many sections have a hungry look due partly to spring drouth and partly to lack of fertilization. Fertilization has been neglected due to the low returns on fruit.

It is worth noting that fruit droppage on groves which have been well fertilized and watered is nil while half of next year's crop is on the ground in the groves which are hungry and dry.

SOUTH POLK, HIGHLANDS, HARDEE AND DESOTO COUNTIES
C. R. Wingfield

With the summer application of fertilizer almost completed we still have problems from the standpoint of insects and moisture conditions. It appears that Purple and Red Scale has reached a high stage and will continue to increase. Spraying for scale should already have been started where scale is most serious. Where Oil is used spray Hamlins or early varieties first to avoid any ill effects on solids. Parathion will not affect the solids and can be used at a later date if infestation is only slight at this time. The infestation of Red Spider is still very high but with the use of Oil sprays there should be some decrease in population. The Rust Mite appears to be moving from the leaf to the fruit at this time and should be brought under control with Sulphur, either in spray or dust. Where Rust Mite is found in large numbers they should be brought under control before Oil is applied. A 3-inch steady rain would be welcomed.

PASCO & EAST HILLSBOROUGH
E. A. (Mac) McCartney

There has been some good rains in this section during the past two weeks which were very beneficial to Citrus, but the vegetable crops were rained out in some places. This crop, however, was about over and most of the vegetable growers have had a good year. Citrus has been a disappointment in most cases, but the groves are in good condition. There is some scale which is being taken care of with oil sprays.

Our fertilizer application for the summer is about over and there is very little fruit left with the exception of grapefruit. A good orange crop is set for next season and grapefruit looks a little light.

HILLSBOROUGH & PINELLAS
T. D. Watson

Conditions in Hillsborough and Pinellas Counties are very good. Practically all grove owners have finished their June application of fertilizer and are getting ready for their summer oil spray or whatever spray they use for controlling scale, oil in most cases.

There are a few isolated localities in Pinellas County that still has been very short of rainfall and up to the weekend were still irrigating. With the rainy season practically on us, I believe that they will have adequate moisture.

With the coming of the rainy season most ranchers and dairymen are beginning to plant considerable acreage of pangola grass. Late plantings of Pensacola Bahia will begin as soon as a new crop of seed is harvested.

All in all practically everyone is anxious to get out of their groves for a while during this extremely hot weather and are going right ahead to finish their scale and rust mite control sprays.

NORTH CENTRAL FLORIDA
V. E. Bourland

We have been having some hot weather, and some showers of rain in different places. Some places are still dry, even cover crops are dying. Lot of groves are too dry to spray with oil. Scale is very bad in most sections. Rust mites have been kept under control by dusting in most places so far.

Oranges are looking very nice and most varieties have good crop. Some varieties of Grapefruit are short. Tangerines seem to be very light in all places. Young trees are looking good, but most of them have had to be kept watered.

POLK & HIGHLANDS COUNTY
J. T. Griffiths and J. K. Ensor, Jr.

Summer applications of fertilizer have been applied to almost all groves during May and early June. Summer growth is showing in many of these groves and there is scattered bloom where crop set was light.

Many growers were applying oil or parathion sprays by mid-June. Due to a heavy build-up of purple scale throughout the winter and spring months, it is essential that sprays for scale control be applied. Early July sprays should give satisfactory control. Because of the heavy scale infestations in many groves, growers should be sure that sufficient gallons are applied per tree to insure thorough wetting of all leaves and twigs.

Rust mites have increased very rapidly in many groves during June. Such infestations should be watched and sulfur applied if necessary. Oil and sulfur sprays should generally be separated by a 10 day to 2 week interval.

During June the foliage in some of the groves had a slightly yellow cast due to a heavy infestation of purple mites. This infestation made the trees look hard and apparently hungry. Rains in June coupled with the summer fertilizer application will remedy this situation.

Most young groves should receive an application of fertilizer during early July.

WEST CENTRAL FLORIDA
J. E. Mickler

This past month has seen Summer come forth with more than its share of hot weather. Rain has been plentiful over most of this area, and with some melon growers it has been in too big doses. Melon shipments have been heavy and the prices have been very good. At present writing prices are still holding firm. Weather conditions seem to have set the tomato growers back this year, and low prices on the whole prevailed.

More grove owners this summer have planted Hairy Indigo for cover crop, rains have been helpful in giving a good stand and lush growth should follow.

Uncle Bill Says:

They's a heap of Florida growers right now who are figurin' on taking a vacation from the tough job of cultivatin', producin' and marketin' their crops durin' past several months . . . and we'd say that every grower in Florida would be servin' himself best to take a little time off and git away from his problems, if only fer a few days.

Might be that this year's profits has been a little thin so that a long trip is out of the question, but even a little change of scenery is a good thing fer most everyone, even if the distance from home ain't very great.

A lot of problems has come up this past season and a lot of 'em has been licked . . . and as time goes on other problems will arise . . . and in accord with their long time record the growers will meet 'em and lick 'em . . . but in between times it's a pretty good plan to git away from the scene of the battle and to git re-acquainted with one's family . . . and to sort of git the cobwebs out of feller's mind.

They has been and is bein' a lot of study given by individual growers and groups of growers as to how best to improve our situation . . . but they is one thing sure, no matter what the plan for improvin' our economic situation may be, the need for continuin' to produce the finest quality fruit we can raise is one program which must be maintained in any plan to continue our business success as growers.

It don't make no difference what the commodity is, the quality piece of meat, the quality grade of coffee, the quality can of tomatoes or the quality fresh citrus fruit or the quality canned citrus juice always commands the top market price . . . and, incidentally, helps to build a firm and continuing market for itself.

And as we've said before Lyons Fertilizers do an outstandin' job of producin' Maximum Crops of Finest Quality.

Some Problems of Citrus Growers In The Indian River Section....

THE SITUATION AS VIEWED BY SOME OF THE LEADING VETERAN GROWERS

Citrus growers in Florida's scenic Indian River area are faced with increasingly difficult production problems which make profits short and risks long.

From New Smyrna Beach to West Palm Beach, Indian River growers have established a prized master brand for choice fruit grown in their rich, low hammock groves. But the very productiveness of the soil has brought with it a series of detriments which make citrus growing a hazardous and often, non-profitable business.

Lowness of the hammocks presents a primary production problem, that of drainage. Growers must remove a good portion of the water on their land before planting. This tends to create a fluctuating water table which rises and falls as much as eight feet during wet and dry periods. Nearness to the salt water of the Atlantic Ocean, long considered a major factor in the good taste of Indian River fruit, nevertheless presents a secondary production problem—excess moisture.

With the root systems barely 18 inches below the surface of the ground and the water table fluctuating almost constantly, upper portions of the trees are susceptible to dieback and ripe for an invasion of citrus fungus diseases of which melanose is the most troublesome and costly. The chief source of this citrus malady, according to the Citrus Experiment Station, comes from spores produced on dead wood in the trees and germinated in the presence of moisture.

Melanose is characterized by black eruptions on the surface of the fruit. It is a costly discoloration, even if mildly affected, because the fruit cannot be shipped as U. S. No. 1 grade. Federal grade standards apply to the external appearance of the fruit only, and therefore, the discolored citrus is relegated to an inferior U. S. No. 2 russet grade which is often banned from interstate fresh fruit shipment by the federal regulatory marketing committees.

Indian River growers cannot even salvage, at break-even prices, their fruit which for reason of outer appearance, is not permitted in interstate traffic. As the discolored outer appearance has no effect on interior quality, its the usual practice to send it to canning or concentrating plants.

With only one canning plant operating in the East Coast area, the bulk of the discolored fruit must be trucked long distances to processing facilities located in Central Florida. This drives the pick and haul charges so high that Indian River growers realize little or nothing for their fruit and in many instances, prefer to let them drop on the ground rather than sell to processors at red ink returns.

Citrus growers in other producing areas of the State have been hypercritical of Indian River growing practices mainly because of the ever-present melanose discoloration of the fruit. But the enormity of the problem coupled with adverse conditions created by nature, make it an almost uncontrollable dilemma.

"Melanose is particularly bad this year because we had two weeks of rainy weather toward the end of last season," added W. M. Moseley, veteran manager of the huge Fort Pierce Growers Association and also a director of Florida Citrus Mutual. "But the important thing is timing the sprays and if the fungus can be caught on the trees at the right time, a lot of grief and lower prices will be avoided."

Another factor to be added to the woes of growing citrus on the Indian River is the shorter life expectancy of trees from those in other portions of the State. According to Marcel Boudet, Indian River county agent, recent governmental estimates place the life of a tree on the East Coast at 33 1/3 years while those of the Ridge or Interior Florida will live to see 50.

It all adds up to higher expenses for the Indian River grower which, together with a lower per box yield per acre, makes for a risky and for the most part, increasingly less profitable business venture.

"We have more melanose along the Indian River than in any other part of the State," explained A. B. Michael of Wabasso, pioneer East Coast grower and a director of Florida Citrus Mutual. "It is either the result of a soil or climate condition, or possibly a combination of both."

The disease, which generally is conceded to cost Indian River growers between 15 and 20 cents per box in sprays and dusts to control it, is ravaging price returns and discouraging further expenditures needed to keep the malady from completely blackening every grove. Severe pruning, at least theoretically, is believed to be the most effective method of coping with melanone since the chief source of infection is in the dead wood in the trees.

But the thoroughness required in pruning old-bearing trees especially in the larger groves, would prove to be an endless job and costs would be prohibitive.

Here's what a few prominent Indian River citrus men have to say on the malanose problem:

"We would have to spray after every rain to efficiently control it," commented C. M. Seraphine, manager of the Vero-Indian River Producers Association in Vero Beach.

"Weather conditions are mainly responsible for it," said Jack Strong, manager of the Indian River Growers Service. "We spray as often as we

can and still keep costs within reason. But during the rainy season, it just cannot be controlled."

Certain portions of land along the history-rich Indian River have been described as "good only for holding the world together" and yet, despite higher production costs and continuing disease problems, this East Coast area produces some of the finest fresh citrus in the World.

"But we've got more problems than we know what to do with," said Paul R. Robertson, a large Vero Beach grower and member of the federal citrus marketing agreement committees. "It's true we have some of the finest groves in Florida but odd conditions of nature such as our fluctuating water table, excess moisture, and peculiar soil formation, cut our net returns to practically nothing after deducting expenses which are becoming exhorbitant."

Similar conditions exist along the almost 200 mile stretch comprising the Indian River citrus producing area from New Smyrna Beach to West Palm Beach, Robertson stated. Water damage to the roots causes die-back in the trees and the resultant dead wood is a prime target for a dread citrus fungus, melanose. The fungus thrives on excess moisture.

Robertson, who owns considerable grove acreage in the Vero Beach area, said three types of soil prevail in the Indian River section—a muck or humus soil, a limestone or calcareous soil, and a sandy soil. All three may be found in a single grove of small acreage.

In the sandy soil which is completely saturated in a short time, it requires only 24 hours of high water to damage roots and pave the way for melanose. Trees on the muck soils can withstand water for as much as 11 days without feeling the effects of water damage.

"Long periods of dampness do not help the melanose situation any," Robertson stated. "In the Ridge or Interior Florida, trees are all dried off by 7:30 o'clock in the morning while ours still show signs of dampness at 10:30 A .M."

When asked reasons why costs of production are higher on the Indian River, the Vero Beach grower replied:

"It stems from our peculiar soil, weather conditions, and other circumstances over which we have no control. First of all, its expensive clearing the heavy, hammock lands for planting. Tree beds must be built up, dikes constructed, drainage ditches dug, windbreaks grown, and pumping equipment bought to handle high waters. Maintaining the groves is almost a hand operation since the deep drainage ditches prevent the use of heavy equipment. We have to fertilize three times a year and spray five times to keep the trees in a healthy, bearing condition. It all adds up to a lot of money."

Robertson's remarks are borne out by a cost survey conducted by Zach Savage, associate agricultural economist of the Agricultural Experiment Station at Gainesville. Savage studied nine groves averaging 582 acres in the Indian River sectoin over a four year period and found it cost an average $1.45 to grow a box of citrus including six per cent interest on grove valuation.

"Most of our citrus is grown on sour-orange rootstock which produces good quality fruit, grows well on low land, and appears to suffer less from water damage," Robertson continued. "But it has some disadvantages among which are smallness of trees, lower yield than other rootstocks, and shorter life."

Sour orange is the only rootstock that can "take" the rugged Indian River growing conditions, he said. "Lemon rootstock just cannot stand any water damage."

'We're trying to stay in business and make a profit in the American tradition," the veteran grower added. "I'm sure that when growers in other parts of the State really look into our almost insurmountable problems, they will be more sympathetic and join with us in our fight to keep Indian River citrus alive."

USDA PROPOSES REVISION OF LIME STANDARDS

The U. S. Department of Agriculture has announced a proposed revision of existing U. S. standards for Persian (Tahiti) limes. Present standards have been in effect since May 1, 1939.

Principal change in the proposed revision would raise the requirements for fruit juice content for the various grades of Persian limes to 42 percent. Present juice content requirement is 40 percent. A number of definitions and tolerances in the present standards also would be reworded for clarity under the proposed revision.

Department officials pointed out that under an amendment to the Florida Citrus Code, which became effective April 30, 1951, shipment of limes having lower than 42 percent juice content is prohibited.

EFFECT OF VARIOUS TREATMENTS OF DECAY IN TANGERINES

(Continued from page 13)

had been precooled 22 hours and had an average temperature of 45.5°. The commodity temperature at time of unloading ranged from 32 to 34 degrees. The cooler crates in the car must have had some effect on the rate of cooling of the test packages during the transit period. During the transit period the top and bottom of this load cooled at about the same rate, however, the middle layer was somewhat slower and remained warmer throughout the ten-day transit period.

The first midnight after loading, the temperature ranged from 51° F. at the bottom bunker position to 65° at the middle quarter-length location. Twenty-four hours later, the temperature in the crates ranged from 43 to 53 degrees in the same locations. By noon of the second day after loading the warmest part of the load was below 50° and the coldest part about 37°. From the third day after loading until arrival at destination the commodity temperature was in the 30's, and there was less than 5 degrees spread in temperature between the coldest and warmest location. During the last few days of the transit period the temperatures in these locations ranged from 32 degrees in both the bottom and top locations to 34 degrees in the middle positions. This car was serviced with 29,050 pounds of ice of which 8,150 was supplied west of Birmingham, i.e., after the second day en route.

When this car was unloaded in Seattle the lading was in generally sound condition and the test crates had from 0 percent to 0.5 percent decayed fruits with an average of less than ½ of 1 percent. The decay was caused by the green mold fungus.

In view of the relatively small amount of ice supplied these cars west of Birmnigham, Alabama, during their transcontinental movement, it may be questionable if standard refrigeration is always necessary when tangerines are shipped in fan cars to distant markets in cool winter months. Although a test shipment with tangerines under Rule 251, i.e., initial icing followed by only one re-icing was not made, an opportunity presented itself to get temperature-in-transit records on a transcontinental shipment of grapefruit in wirebound crates. Since grapefruit has a billing weight of 83 pounds per 1-3/5-bushel wirebound crate and tangerines 45 pounds per 4/5-bushel wirebound crate, a 525 load of the former has approximateliy the same billing weight as a 968 box load of the latter. With loads of grapefruit and tangerines of similar weight, the rate of cooling per ton of ice melted should be approximately the same although the smaller fruit in small packages may cool more rapidly.

This test with grapefruit was made in fan car, FGE 38842. There were a few hundred pounds of old ice in the bunkers when the car was loaded in Polk County on February 22, 1951, with 525 1-3/5-bushel wirebound crates of grapefruit. The fruit was precooled six hours with a platform precooler after loading, and shipped to Los Angeles via SAL, L&N, SP. The car was initially iced early in the morning after loading and re-iced with 7,800 pounds at New Orleans on the third day making the total amount of ice supplied slightly less than 17,400. The commodity temperature when loaded was 61.2° F. and when unloaded eleven days later, it was 35 to 38 degrees. The six hours precooling had but little effect on the commodity in the top or middle of the load, but the old ice in the bunkers cooled the fruit in the bottom location about 10 degrees. Soon after this car was initially iced, the top layer became the coolest part of the load and remained so throughout the trip. The mdidle position was the warmest during the first half of the trip while the bottom was the warmest during the latter half. By midnight of the temperatures were 45° in the top of the load and 51° in the middle layer, day after loading the commodity and they remained in the 40's until the car was re-iced. Thereafter, the temperature ranged mostly between 35 and 40 degrees and when unloaded eleven days after shipment the commodity temperature ranged between 35 and 38 degrees. This test indicated that if the fruit was well precooled one re-icing en route even for long distance shipments, may suffice during the cooler months when tangerines are shipped.

(Continued next month)

World Citrus Production Continues To Expand

FROM FOREIGN CROPS AND MARKETS, USDA

World production of citrus in 1951-52 is expected to continue the long-time upward trend which has been in evidence for the last 4 decades. The output of the 4 major citrus crops, oranges, including tangerines and mandarins, grapefruit, lemons and limes, is indicated to total 389 million boxes in the 1951-52 season, compared with 380 million boxes in 1950-51 and the 5-year (1935-39) average of 274 million boxes. Of the expected production in the current season 310 million boxes are oranges, 45 million grapefruit, 30 million are lemons and about 4 million are limes. More over, the United States is indicated to produce 175 million or 45 per cent of the 1951-52 world total including 39 per cent of the oranges, 89 per cent of the grapefruit, and 42 per cent of the lemons.

The world production of oranges, including tangerines and mandarins, is expected to total 310 million boxes in 1951-52, compared with 296 million boxes in 1950-51 and the prewar average of 213 million boxes. Major increases over the previous season are noted for Greece, Spain, Lebanon, Israel, Turkey, Argentina, Brazil and French North Africa, while only Itlay shows a major decrease. In the latter area floods and storms

(Continued to Inside Back Cover

CLASSIFIED ADS

WORLD CITRUS PRODUCTION CONTINUES TO EXPAND...

(Continued from preceding page)

together with the influence of a heavy crop the previous year contributed to the decrease. A severe windstorm in Valencia, Spain during the last week of December caused a heavy blow down of oranges, estimated at 5 million boxes, and caused considerable damage generally. A large proportion of "blow downs" will be salvaged for processing and local sales.

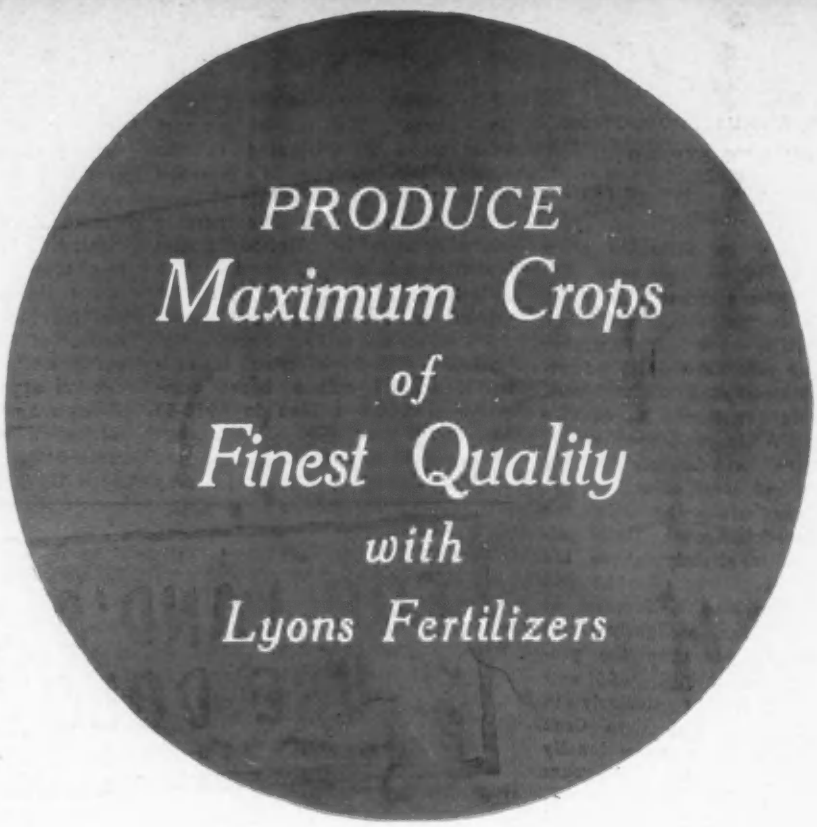
Production of oranges in the United States, indicated at 122 million boxes, is slightly above the crop from the bloom of 1950 and the output in Mexico, forecast at 11.5 million boxes, is slightly above the freeze-damaged crop the previous year. Plantings of new groves in Mexico, particularly in the Montemorelos and Vera Cruz districts have been exceptionally heavy during the last few years and, barring further freeze damage, production in the future is expected to increase sharply.

World grapefruit production prospects totaling 44.8 million boxes in 1951-52 is 12 per cent smaller than the 51.1 million boxes produced in 1950-51 but 27 per cent larger than the 5-year (1935-39) average of 35.2 million boxes. The decrease is largely in the United States where most of the world's crop is produced and where a severe freeze in 1950 practically wiped out the Texas industry. The 1951-52 United States crop is indicated to total 39.9 million boxes compared with 46.6 million in 1950-51 and the 1935-39 average of 31.8 million. The only other major producer, Israel, has prospects for a crop of 1.5 million boxes or slightly more than in the previous season but about equal to the prewar average.

Lemon production for the world is indicated at 30.5 million boxes in 1951-52 compared with 29.2 million boxes in 1950-51 and the 5-year (1935-39) average of 23.2 million boxes. A slight decrease in the United States is more than offset by moderate increases in other major producing countries such as Italy, Spain and Chile.

Production this season in Italy is indicated to be up sharply from last season and considerably above the levels of recent years. The current crop, estimated at 9.4 million boxes, however, is slightly below the prewar average of 9.6 million boxes. The larger prospect this season is attributed to the coming into bearing of improved disease resistant varieties, and foretells a probable long-time increase in volume. The United States lemon crop is now indicated at 12.8 million boxes compared with 13.4 million in 1950-51 and the prewar average of 9.6 million boxes.

World lime production is estimated at 3.7 million boxes compared with 3.6 million in 1950-51 and the 5-year (1935-39) average of 2.3 million boxes. Mexico, the chief producing country, has a crop prospect of 1.9 million boxes or slightly more than the 1.7 million produced in 1950-51 and the prewar average of 652,000 boxes. The United States (Florida) crop is indicated at 260,000 boxes, or slightly less than in the previous season but 4 times as much as the average for 1935-39. This is one of a series of regularly scheduled reports on world agricultural production approved by the Office of Foreign Agricultural Relations Committee on Foreign Crop and Livestock Statistics. It is based in part upon U. S. Foreign Service reports.



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